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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,021	02/03/2004	Stephen F. Bush	036-0027	2651

67413 7590 12/26/2007  
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EXAMINER

ROBERTS, BRIAN S

ART UNIT PAPER NUMBER

2619

MAIL DATE DELIVERY MODE

12/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/771,021	<b>Applicant(s)</b> BUSH, STEPHEN F.	
	<b>Examiner</b> Brian Roberts	<b>Art Unit</b> 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

- The Amendment filed on 10/09/2007 is acknowledged.
- Claims 1 and 6-20 remain pending.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In reference to claim 1, 8, 15

The limitation "genetically modifies itself" 11 renders the claim indefinite. The limitation is not defined by the claim or the specification and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Furthermore in line 9, the limitation "the functional unit remaining inactive" is unclear. A functional unit is data and data can not be active or inactive. A node may or may not utilize the functional unit but a functional unit is not active or inactive. Furthermore in line 10, it is unclear if the plurality of nodes evolve to maximize the fitness function or the functional unit evolves to maximize the fitness function.

- In reference to claim 6 and 19

It is unclear how a packet is capable of performing a mutation operation or generate a program. A packet is simply a formatted block of data comprising a header, payload, and a trailer. A computer can perform an operation on a packet but a packet cannot perform an operation by itself.

- In reference to claim 10

The phrase "two parental programs have different sizes and shapes" renders the claim indefinite. It is unclear how a program has a size or shape.

- In reference to claim 12

The phrase "population of structures" renders the claim indefinite. It is unclear what constitutes a structure.

- In reference to claim 14

The phrase "enforcing minimal requirements on an execution environment of the network" renders the claim indefinite. It is unclear which requirements the limitation is referring too and what constitutes "an execution environment".

- In reference to claim 15

The phrase "implementing a genetically programmed adaptation of one of the plurality of nodes using an active packet in response to a change of condition of the one

node of the plurality of nodes being executed by an active packet" is unclear and confusing

- In reference to claim 17-18

The limitation "a state of the network" renders the claim indefinite because it is unclear what constitutes a state and what are the possible states of the network.

- In reference to claim 20

It is unclear how a packet is capable of performing a crossover operation. A packet is simply a formatted block of data comprising a header, payload, and a trailer. A computer can perform an operation on a packet but a packet cannot perform an operation by itself.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-20, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Popp et al. (US 6266577)

- In reference to claim 1, 8, 12-15

In Figure 3, Popp et al. teaches an ad-hoc wireless network **100** that includes:

A plurality of nodes **120** transmitting control logic packets that implement a genetically programmed adaptation of one of the plurality of nodes **120** in response to a change of condition of the one node **120** a functional unit in the control logic packet; a fitness function that allows functional evolution of the plurality of nodes **120** the functional unit remaining inactive until the fitness function is added into the one node **120** and evolves to maximize the fitness function, wherein the system **100** genetically modifies itself to meet a specific fitness criteria based on the fitness function. (column 4 line 32 – column 5 line 60)

- In reference to claim 6-7, 19

In Figure 3, Popp et al. further teaches the control logic packets perform a mutation operation for generating a single parental program that is probabilistically selected based on fitness. (column 4 line 32 – column 5 line 60)

- In reference to claim 9-10, 20

In Figure 3, Popp et al. further teaches performing a crossover operation by generating two parental programs which are probabilistically selected based on fitness.

- In reference to claim 11

In Figure 3, Popp et al. further teaches continuously evaluating the functional unit. (column 4 line 32 – column 5 line 60)

- In reference to claim 16

In Figure 3, Popp et al. further teaches broadcasting the state of each of the plurality of nodes **120** to the other nodes **120**. (column 4 line 32 – column 5 line 60)

- In reference to claim 17-18

In Figure 3, Popp et al. further teaches predicting a state of the network **100** and querying the network **100** to verify the accuracy of the predication. (column 4 line 32 – column 5 line 60)

### ***Response to Arguments***

5. Applicant's arguments with respect to claim the independent claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are:

- Solomon (US 6904335) teaches a system for organizing groups of self-configurable mobile robotic agents in a multi-robotic system.
- Sasagawa et al. (US 6675155) teaches a layout method arranging nodes corresponding to LSI elements having a connection relationship.
- Kim et al. (US 6917811) teaches a method for dynamically assigning channel in real time based genetic algorithm.

- Shanckleford et al. (US 5970487) teaches a genetic algorithm machine and its production method, and method for executing a genetic algorithm.
- Hughes et al. (US 5930780) teaches a distributed genetic programming.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 10:00-7:30.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BSR  
12/18/2007

  
12/19/07  
WING CHAN  
SUPERVISORY PATENT EXAMINER